

L24 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN

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TI Formation of self-cleaning surfaces

IN Barthlott, Wilhelm

PA Germany

SO PCT Int. Appl., 14 pp.

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DT Patent

LA German

IC ICM B29C059-00

ICS C09K003-18

CC 42-2 (Coatings, Inks, and Related Products)

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	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9604123	A1	19960215	WO 1995-EP2934	19950725 <--
	W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KG, KP, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN				
	RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9531655	A1	19960304	AU 1995-31655	19950725
	EP 772514	A1	19970514	EP 1995-927720	19950725
	EP 772514	B1	19981223		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	HU 75807	A2	19970528	HU 1997-175	19950725
	HU 217781	B	20000428		
	JP 10507695	T2	19980728	JP 1995-506157	19950725
	AT 174837	E	19990115	AT 1995-927720	19950725
	ES 2128071	T3	19990501	ES 1995-927720	19950725
	PL 178053	B1	20000229	PL 1995-318260	19950725
	US 6660363	B1	20031209	US 1997-776313	19970129
PRAI	DE 1994-4426962	A	19940729		
	WO 1995-EP2934	W	19950725		

#### CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9604123	ICM	B29C059-00
	ICS	C09K003-18
WO 9604123	ECLA	B08B017/02; B08B017/06; B29C059/02C; F24J002/50B2; F28F019/00 <--
US 6660363	ECLA	B08B017/02; B08B017/06; B29C059/02C; F24J002/50B2; F28F019/00

AB Self-cleaning surfaces are created by forming an artificial structure on the surface of the substrate, comprising elevations formed from hydrophobic polymers or other hydrophobic materials and depressions which cannot be detached by H2O or aqueous detergents, the distance between elevations being 5-200  $\mu$ m and the height of elevations being 5-100  $\mu$ m. A smooth plastic surface (e.g., polyethylene) was covered with a thin layer of adhesive and then coated uniformly with powdered Teflon (average particle size 7  $\mu$ m) and cured to give a surface from which deposited particles (e.g., soot) could be rinsed with water.

ST coating surface self cleaning; plastic self cleaning coating; polyethylene self cleaning coating; PTFE powder coating self cleaning

IT Coating process  
(formation of self-cleaning surfaces)

IT Plastics

RL: MSC (Miscellaneous); PEP (Physical, engineering or chemical process);

PROC (Process)

(formation of self-cleaning surfaces on)

IT Cleaning  
 (self-; formation of self-cleaning surfaces)

IT Printing, nonimpact  
 (silk-screen; in formation of self-cleaning surfaces)

IT 9002-84-0  
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (powdered; in formation of self-cleaning surfaces)

RN 9002-84-0

L24 ANSWER 2 OF 2 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 1996-129205 [13] WPIX

DNC C1996-040243

TI Self-cleaning surfaces, cleanable with rain or moving water - have artificial surface structure with elevations and depressions, the elevations at least consisting of hydrophobic polymer or material.

DC A35 A93

IN BARTHLOTT, W

PA (BART-I) BARTHLOTT W

CYC 65

PI WO 9604123 A1 19960215 (199613)\* GE 15 B29C059-00 <--  
 RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ UG  
 W: AM AU BB BG BR BY CA CN CZ EE FI GE HU IS JP KG KP KR KZ LK LR LT  
 LV MD MG MN MX NO NZ PL RO RU SG SI SK TJ TM TT UA UG US UZ VN

AU 9531655 A 19960304 (199623) B29C059-00

EP 772514 A1 19970514 (199724) GE B29C059-00  
 R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

CZ 9700245 A3 19970514 (199726) B29C059-00

HU 75807 T 19970528 (199805) B29C059-00

JP 10507695 W 19980728 (199840) 11 B29C059-00

EP 772514 B1 19981223 (199904) GE B29C059-00  
 R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE

DE 59504640 G 19990204 (199911) B29C059-00

ES 2128071 T3 19990501 (199924) B29C059-00

HU 217781 B 20000428 (200030) B29C059-00

US 6660363 B1 20031209 (200381) B29C059-00

ADT WO 9604123 A1 WO 1995-EP2934 19950725; AU 9531655 A AU 1995-31655  
 19950725; EP 772514 A1 EP 1995-927720 19950725; WO 1995-EP2934 19950725;  
 CZ 9700245 A3 WO 1995-EP2934 19950725; CZ 1997-245 19950725; HU 75807 T WO  
 1995-EP2934 19950725; HU 1997-175 19950725; JP 10507695 W WO 1995-EP2934  
 19950725; JP 1996-506157 19950725; EP 772514 B1 EP 1995-927720 19950725;  
 WO 1995-EP2934 19950725; DE 59504640 G DE 1995-504640 19950725; EP  
 1995-927720 19950725; WO 1995-EP2934 19950725; ES 2128071 T3 EP  
 1995-927720 19950725; HU 217781 B WO 1995-EP2934 19950725; HU 1997-175  
 19950725; US 6660363 B1 WO 1995-EP2934 19950725; US 1997-776313 19970129

FDT AU 9531655 A Based on WO 9604123; EP 772514 A1 Based on WO 9604123; CZ  
 9700245 A3 Based on WO 9604123; HU 75807 T Based on WO 9604123; JP  
 10507695 W Based on WO 9604123; EP 772514 B1 Based on WO 9604123; DE  
 59504640 G Based on EP 772514, Based on WO 9604123; ES 2128071 T3 Based on  
 EP 772514; HU 217781 B Previous Publ. HU 75807, Based on WO 9604123; US  
 6660363 B1 Based on WO 9604123

PRAI DE 1994-4426962 19940729

REP 1.Jnl.Ref; JP 62191447; US 3354022; WO 8900592

IC ICM B29C059-00  
 ICS B05D005-06; B05D007-24; B29C059-02; B29C059-04; B32B003-26;  
 C09K003-18

AB WO 9604123 A UPAB: 19960329  
 Self-cleaning surfaces of objects have an artificial surface structure with elevations and depressions, the distance between elevations being 5-200mu and the height of the elevations being 5-100mu; the elevations at least consist of hydrophobic polymers (I) or materials made permanently hydrophobic, and are not removed with water or water and detergent.  
 Also claimed is the preparation of self-cleaning surfaces in which the structure is created during or after production of the polymer (I), by

embossing or etching, by sticking a powder on the polymer, or by making surfaces with the required structure permanently hydrophobic.

Pref. substrates are transparent and exposed from time to time to rain or moving water.

USE - Used especially for the production of self-cleaning surfaces on substrate

which are required to retain their transparency for a long period and which are exposed to rain or moving water, e.g. windows in cars and buildings, sunlight collectors etc., and also on house facades, roofs, statues, tents and internal linings of silos, tanks and pipelines.

ADVANTAGE - Provides a surface which is self-cleaning through the action of rain or moving water, even when soiled with particles which are smaller than the space between elevations. The use of aqueous detergents causes an initial loss of self-cleaning action, but this is recovered after washing with rain or moving water, with no permanent damage.

Dwg.0/0

FS CPI

FA AB

MC CPI: A09-A08; A11-C04

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